6 x 9 DATA SHEETS.

paid for if accepted. Only data not available in engineers' handbooks desired.

These data sheets are intended to be cut into four sections, 6 x 9 inches in size. They may then be bound into note-book form for convenient reference, by means of staples inserted in holes punched at the points indicated. A suitable binder for these data sheets will be supplied for 25 cents, which has an open back and will hold an indefinite number of 6 x 9 sheets, depending on the length of staples used.

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TABLE OF FRACTIONS OF $\pi = 3.14159265$.

a	$\frac{\pi}{a}$	a	$\frac{\pi}{a}$	a	$\frac{\pi}{a}$	a	$\frac{\pi}{a}$	a	$\frac{\pi}{a}$	a	$\frac{\pi}{a}$
1	3.14159	18	.17453	35	.08976	52	.06042	69	.04553	86	.03653
2	1.57080	19	.16535	36	.08727	53	.05928	70	.04488	87	.03611
3	1.04720	20	.15708	37	.08491	54	.05818	71	.04425	88	.03570
4	.78540	21	.14960	38	.08267	55	.05712	72	.04363	89	.03530
5	.62832	22	.14280	39	.08055	56	.05610	73	.04304	90	.03491
6	.52360	23	.13659	40	.07854	57	.05512	74	.04245	91	.03452
7	.44880	24	.13090	41	.07662	58	.05417	75	.04189	92	.03415
8	.39270	25	.12566	42	.07480	59	.05325	76	.04134	93	.03378
9	.34907	26	.12083	43.	.07306	60	.05236	77	.04080	94	.03342
10	.31416	27	.11636	44	.07140	61	.05150	78	.04028	95	.03307
11	.28560	28	.11220	45	.06981	62	.05067	79	.03977	96	.03272
12	.26180	29	.10833	46	.06830	63	.04987	80	.03927	97	.03239
13	.24166	30	.10472	47	.06684	64	.04909	81	.03879	98	.03206
14	.22440	31	.10134	48	.06545	65	.04833	82	.03831	99	.03173
15	.20944	32	.09817	49	.06411	66	.04760	83	.03785	100	.03142
16	.19635	33	.09520	50	.06283	67	.04689	84	.03740	...	.....
17	.18480	34	.09240	51	.06160	68	.04620	85	.03696	...	.....

Contributed.

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POWERS OF TOGGLE JOINTS WITH EQUAL ARMS.

P = power applied.
R = resistance.
a = given angle.

From formula $2\,R \sin a = P \cos a$.

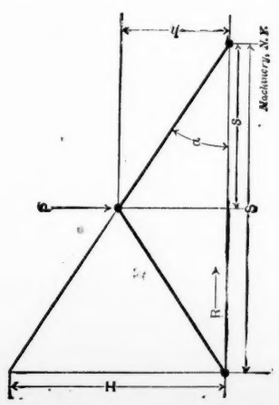
$$\frac{R}{P} = \frac{\cos a}{2 \sin a} = \text{coefficient.}$$

or $R = P \times$ coefficient.

Equivalent expressions:

$$R = \frac{P\,S}{4\,h}; \quad R = \frac{P\,s}{H}, \text{ as per diagram.}$$

To use the table, measure angle a, and find the coefficient in the table corresponding to the angle found. The coefficient is the ratio of the resistance to the power, and multiplying the power by the coefficient gives the resistance, neglecting friction.



Angle.	Coefficient.	Angle.	Coefficient.	Angle.	Coefficient.
0° 2′	862	1° 20′	21.5	5° 00′	5.71
0° 4′	456	1° 30′	19.1	5° 30′	5.19
0° 6′	285	1° 40′	17.2	6° 00′	4.76
0° 8′	216	1° 45′	16.4	6° 30′	4.39
0° 10′	171	1° 50′	15.6	7° 00′	4.07
0° 12′	143	2° 0′	14.3	7° 30′	3.79
0° 14′	122	2° 10′	13.2	8° 00′	3.58
0° 15′	115	2° 15′	12.7	8° 30′	3.35
0° 16′	107	2° 20′	12.5	9° 00′	3.15
0° 18′	95.4	2° 30′	11.5	9° 30′	2.99
0° 20′	85.8	2° 40′	10.7	10° 00′	2.84
0° 25′	68.6	2° 45′	10.4	11° 00′	2.57
0° 30′	57.3	2° 50′	10.1	12° 00′	2.35
0° 35′	49.1	3° 00′	9.54	13° 00′	2.17
0° 40′	42.8	3° 15′	8.81	14° 00′	2.00
0° 45′	38.2	3° 30′	8.17	15° 00′	1.87
0° 50′	34.4	3° 45′	7.63	16° 00′	1.74
0° 55′	31.2	4° 00′	7.25	17° 00′	1.64
1° 00′	28.6	4° 15′	6.73	18° 00′	1.54
1° 10′	24.6	4° 30′	6.35	19° 00′	1.45
1° 15′	22.9	4° 45′	6.02	20° 00′	1.37

Contributed by O. C. Bornholt.